

and ANSI Z86.1-1973. A HEPA-filter will be in-line between the disconnect on the suit and the breathing space in the suit. When these are used in other than an emergency situation, a chemical shower must be provided to decontaminate the surfaces of the suit as the worker leaves the containment area. Suits will be inspected before each use to check for indications of significant wear or leakage. The suits will be worn with impervious boots over the foot area of the suit and the outer gloves will be attached over the hand portion.

(h) *Respiratory protection equipment.*

(1) Respirators and their use will be approved by the safety officer. The selection will be based on the conditions of the activities and the risks involved. In general, National Institute for Occupational Safety and Health (NIOSH) approved respirators that use aerosol filters for dusts and fumes having a Threshold Limit Value (TLV) of less than 0.05 mg/m<sup>3</sup> have been found acceptable for use in microbiological laboratories. Alternatively, the Army M-17 or M-9 masks may be used. Air-supplied hoods are used in situations where greater respiratory protection is required without the need for body protection. One-piece suits are used when total body and respiratory protection are required.

(2) When respirators are used, a respirator protection program will be established that conforms to AR 11-34 and OSHA standards in the 29 CFR 1910.134. In general, a medical authority will designate who is to wear respirators, they will be fitted by individuals trained in their use and limitations, and wearers will be responsible for the proper storage and regular inspection of their assigned respirators. Air-purifying respirators will not be worn in oxygen deficient environments.

(3) Reusable respirators that have been worn in a contaminated area will be decontaminated before reuse. At the end of each workday when a respirator has been worn in an area where it was required, the wearer will wipe it down with an appropriate liquid decontaminant. A damp cloth soaked in the decontaminant, with the excess liquid squeezed out, will be used for the wipe-down process, taking care to ensure that all crevices are reached. The

respirator will be rinsed with clean, warm water. Visibly contaminated respirators will be decontaminated and discarded.

(4) Respirator programs will comply with AR 385-10 and AR 11-34.

(i) *Shoes.* All shoes specially issued for use in controlled access areas should be identified so that they can be segregated from other areas. Safety shoes or boots meeting OSHA requirements stated in the 29 CFR 1910.134 will be issued wherever heavy items or corrosive chemicals are handled. These will be sterilized appropriately after visible contamination. In certain situations (excluding BL-4 operations), it is desirable to wear disposable booties over street shoes, especially when product protection is required.

## Subpart E—Decontamination and Disposal

### § 627.32 Introduction.

All material or equipment that is potentially contaminated with etiologic agents must be rendered nonhazardous before disposal. This chapter describes the acceptable physical and chemical decontamination methods and the general applicability of each. In general, all infectious materials and all contaminated equipment or apparatus will be sterilized before being washed and stored or discarded.

### § 627.33 Methods of decontamination.

(a) *Autoclave.* The use of wet heat is the most dependable procedure for destroying all forms of microbial life. An autoclave employs saturated steam under a pressure of approximately 15 pounds per square inch (psi) to achieve a chamber temperature of at least 121 °C for a minimum of 15 minutes. The time is measured after the temperature of the material being sterilized reaches 121 °C. Other combinations of temperature and pressure (some of which are dependent on the equipment used) can be used to accomplish sterilization provided that the efficacy of sterilization is validated as described below. The most critical factor in ensuring the reliability of this sterilization method, other than proper temperature, is preventing entrapped air that is not replaced by steam. Material to be